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cont.

include, for example, PTFE, fluorinated ethylene-propylene (FEP), tetrafluoroethylene-ethylene (ETFE) copolymers, tetrafluoroethylene-perfluoroalkoxy (PFA) copolymers, poly(vinyl fluoride) (PVF) and poly(vinylidene fluoride) (PVDF).

IN THE CLAIMS:

Please replace claims 3-6, 8-12, 14-17, 19 and 20 with the following amended claims.

1 3. (Amended) A substrate according to claim 1, wherein the
2 fluorinated hydrocarbon polymer comprises one or more non-ion-conducting
3 polymers(s).

1 4. (Amended) A substrate according to claim 3, wherein the
2 non-ion-conducting polymer is selected from the group consisting of
3 polytetrafluoroethylene (PTFE), fluorinated ethylene-propylene (FEP),
4 tetrafluoroethylene-ethylene (ETFE) copolymers, poly(vinyl fluoride) (PVF) and
5 poly(vinylidene fluoride) (PVDF).

1 5. (Amended) A substrate according to claim 1, wherein the
2 silica comprises a colloidal silica and the polymer comprises PTFE.

1 6. (Amended) A substrate according to claim 1, wherein the
2 ratio of silica to polymer is in the range of from 95:5% to 5:95% based on w/w
3 solid materials in the binder mixture.

1 8. (Amended) A substrate according to claim 7 wherein the
2 ratio of silica to polymer is about 50:50%, based on w/w solid materials in the
3 binder mixture.

1 9. (Amended) A substrate according to claim 1, wherein the
2 mixed binder is in the form of a dilute aqueous dispersion.

1 10. (Amended) A substrate according to claim 9 wherein the
2 dilute aqueous dispersion has about 10wt% solids in the aqueous solution.

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1 11. (Amended) A substrate according to claim 1, wherein the
2 fibres comprise at least one of glass or silica.

1 12. (Amended) A substrate according to claim 1, wherein the
2 fibres have a diameter in the range of from 0.1µm to 50µm.

1 14. (Amended) A membrane according to claim 13 which, when
2 dried then boiled in water undergoes less than or equal to about ±16% change in its
3 area.

1 15. (Amended) A process for preparing a porous substrate
2 according to claim 1, which process comprises applying an aqueous dispersion of
3 silica and a fluorinated hydrocarbon polymer to a porous matrix of wet fibres.

1 16. (Amended) A process for the manufacture of a substrate,
2 comprising the steps of

3 (a) dispersing fibres in water to form a slurry;

4 (b) depositing the slurry onto a mesh-bed to form a fibre
5 network;

6 (c) drying and compacting the fibre network; and

7 (d) applying, before or after step (c), a dispersion of a binder
8 comprising both silica and a fluorinated hydrocarbon
9 polymer.

1 17. (Amended) A process for the manufacture of a membrane,
2 comprising the steps of

3 (i) forming a porous substrate according to claim 16; and,
4 thereafter,

5 (ii) impregnating the fibre matrix substrate with a polymeric
6 material to produce a membrane.

1 19. (Amended) A membrane electrode assembly comprising a
2 composite membrane according to claim 13.

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- 1 20. (Amended) A fuel cell comprising a composite membrane
2 according to claim 13.

Please add the following new claims:

- 1 21. (Newly Added) A membrane according to claim 14, wherein
2 said membrane undergoes less than or equal to about $\pm 10\%$ change in area.

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- 1 22. (Newly Added) A membrane according to claim 14, wherein
2 said membrane undergoes an expansion in area of about 0 to about 6%.

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- 1 23. (Newly Added) A process according to claim 17, wherein
2 ~~said mixed amorphous silica fibres are randomly oriented in said porous substrate.~~

Respectfully submitted,



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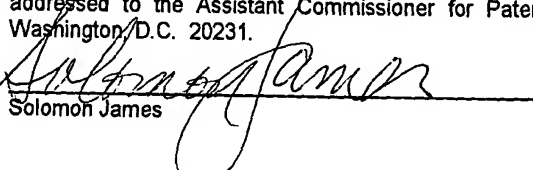
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